

IN THE CLAIMS:

A complete set of the claims as currently amended is provided in the “Listing of Claims” below.

LISTING OF CLAIMS

Claim 1 (Currently amended): A semiconductor device comprising an insulation film consisting of a fluoridation carbon film that is a chemical compound of carbon and fluorine ~~has been subjected to thermal history of 420°C or lower,~~ wherein

hydrogen atoms are included as impurities in the fluoridation carbon film, resulting from a chemical compound including hydrogen atoms as impurities, and

an amount of the hydrogen atoms included in the fluoridation carbon film is not more than 3 atomic % and more than 0 atomic% ~~before the fluoridation carbon film is subjected to the thermal history.~~

Claim 2 (Original): A semiconductor device according to claim 1, wherein the insulation film is an interlayer insulation film.

Claim 3 (Previously presented): A manufacturing method of a semiconductor device comprising the steps of:

generating a plasma of a source gas consisting of a chemical compound of carbon and fluorine and including hydrogen atoms of 1×10^{-3} atomic % or less, and

forming an insulating film consisting of a fluoridation carbon film that includes hydrogen atoms of not more than 3 atomic % and more than 0 atomic%, on a substrate, by using the plasma of the source gas, the hydrogen atoms resulting from a chemical compound including

hydrogen atoms as impurities.

Claim 4 (Original): A manufacturing method of a semiconductor device according to claim 3, further comprising: heating the substrate at a temperature of 420°C or lower, after the step of forming the insulating film.

Claim 5 (Original): A manufacturing method of a semiconductor device according to claim 3 or 4, wherein the chemical compound of carbon and fluorine is C₅F₈.

Claims 6-17 (Cancelled).